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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/737,155	12/14/2000	Tomas Nordstrom	S1022/8494	8195

7590 06/23/2004

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EXAMINER

BAYARD, EMMANUEL

ART UNIT	PAPER NUMBER
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2631

DATE MAILED: 06/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/737,155

Applicant(s)

NORDSTROM ET AL.

Examiner

Emmanuel Bayard

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 1-11 and 36-39 is/are allowed.
- 6) ☒ Claim(s) 12-17, 23-28, 34 and 35 is/are rejected.
- 7) ☒ Claim(s) 18-22 and 29-33 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 12-17, 23-28, 34-35 are rejected under 35 U.S.C. 102(e) as being anticipated by Peeters et al U.S. Patent No 6,628,738 B1.

As per claims 12 and 23, Peeters et al teaches a communication system including a first phase modulated carrier signal and a plurality of second phase modulated carrier signals, the first phase modulated carrier signal and the plurality of second phase modulated carrier signals having a same carrier frequency, a method comprising an act of: applying a linear combination (see figs. 1-3 and col.3, lines 35-67 and col.4, lines 1-3) of estimated complex symbols derived from the plurality of second phase modulated carrier signals to a first complex symbol derived from the first phase modulated carrier signal (see col.7, lines 25-67).

As per claims 13 and 24, Peeters et al does include reducing far-end crosstalk in the first phase modulated carrier signal (see col.8, lines 15-16 and col.9, lines 40-65).

As per claims 14 and 25 Peeters et al does include wherein the first phase modulated carrier signal includes a first quadrature amplitude modulated carrier signal, wherein the plurality of second phase modulated carrier signals includes a plurality of

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second quadrature amplitude modulated carrier signals, and wherein the act a) comprises an act of applying the linear combination of (see figs. 1-3 and col.3, lines 35-67 and col.4, lines 1-3) the estimated complex symbols derived from the plurality of second quadrature amplitude modulated carrier signals to the first complex symbol derived from the first quadrature amplitude modulated carrier signal (see col.7, lines 25-67).

As per claims 15 and 26, Peeters et al does include wherein the act a) further comprises an act of: calculating the linear combination of estimated complex symbols based on a plurality of weighting values associated with the plurality of second phase modulated carrier signals (see col.3, lines 35-67 and col.7, lines 35-65).

As per claims 16 and 27, Peeters et al does include wherein the act b) further comprises acts of: multiplying (see figs. 1-3 elements MU and col.7, lines 46-67) each estimated complex symbol of the estimated complex symbols by a corresponding one of the plurality of weighting values to generate a plurality of weighted estimated complex symbols (col.7, lines 25-67); and calculating a sum of the plurality of weighted estimated complex symbols to generate the linear combination (see col.3, lines 30-35, 63-65 and col.7, lines 46-49).

As per claims 17 and 28, Peeters et al inherently includes wherein the act a) further comprises an act of subtracting the linear combination of estimated complex symbols from the first complex symbol to generate a third complex value.

As per claims 34 and 35, Peeters et al does include wherein the communication system includes at least one modem (see abstract) coupled to the controller, and wherein the apparatus includes the controller in combination with the at least one modem.

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*Allowable Subject Matter*

3. Claims 1-11 and 36-39 are allowed over the prior art of record.
4. Claims 18-22 and 29-33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
5. The following is a statement of reasons for the indication of allowable subject matter: The prior arts of record fail to anticipate or render obvious the following recited features: subtracting said linear combination from the frequency components generated by said at least one line termination modem and applying a resulting difference to the demapping means of at the least one line termination modem as recited in claims 1 and 7. Demapping the third complex value to a phase modulation constellation point, making a comparison of the phase modulation constellation point and the third complex value and generating an error based on the comparison as recited in claims 18, 29, 36 and 39.

*Conclusion*

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Vandenporpe et al U.S. patent No 6,400,781 B1 teaches a multiband detector.

Marash et al U.S. Patent No 6,049,607 teaches an interference canceling method.

Ho et al U.S. Patent No 6,148,024 teaches a FFT-based multitone DOSK modem.

Van Acker et al U.S. patent No 6,744,821 B1 teaches a multicarrier receiver.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel Bayard whose telephone number is 703 308-

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9573. The examiner can normally be reached on Monday-Friday (7:Am-4:30PM)

Alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammed Ghayour can be reached on 703 306-3034. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

6/21/04

Emmanuel Bayard  
Primary Examiner  
Art Unit 2631

  
EMMANUEL BAYARD  
PRIMARY EXAMINER